WHAT IS PLUMBING PIPE:

- Plumbing pipe is a type of pipe which is used for plumbing purpose.
- These pipes are easy to cut, flexible type which helps to create a proper way of plumbing.
- In plumbing pipe, joints are protected by metal crimp rings or epoxy fittings.

TYPES OF PLUMBING PIPE: TYPES OF PIPE:

There are generally 9 types of plumbing pipe are used in the plumbing system, thoise are following below –

Cast Iron Pipe –

- Cast iron pipe is widely used in the city plumbing system because it has higher resistance property to corrosion resistance and it also has long life, near about 100 years.
- Cast iron pipes are made of pig iron and it are available in the sizes of 5 to 120 cm of diameters.
- It are generally available in 12 feet but it is also available in 20 feet.
- To create them corrosion resistive it is coated with bitumen compound and sometimes lining is also done by cement mortar.
- A corrosion joint of cast iron pipe is made of bell and spigot. Joints are sealed by cement mortar but this type of joint is not flexible enough.
- This type of pipes are used in filter plants, pumping stations, etc. Flanged portion is coupled with gasket and make sure that it is water tight.
- The cost of this type of pipe fittings are cheaper than other ones because the cost of the initial products are moderate and it does not requires skilled labours and it can be joined easily; so , the overall price is decreased.
- The following three methods are used to join the cast iron pipe, those are –
    - Hanged Joint
    - Bell and Spigot Joint
    - Expansion Joint

Galvanized Iron Pipe (G.I. Pipe) –

- Galvanized iron pipe is another type of well known plumbing pipe, which is made of mild steel and the joint type of welded seam joint.
- Galvanized iron pipes are available in 6 inches (15 cm) to 0.5 inches (12 mm) in diameter & 20 feet in length.
- The wall thickness of this pipe varies according to their diameter and after producing this pipe is it immersed in zinc solution to make them corrosion protective material and the process is known as “Galvanizing”.
- The average lifespan of these pipes are 5 to 10 years and cutting, threading & joining operation is easily done in this pipe.
- These types of pipes are very light weight but those are weaker in acidic or alkaline attacks.

Wrought Iron Pipes –

- Wrought iron pipes are almost similar like G.I. pipes and they are used for transporting gas, water from one place to another place.
- Wrought iron pipes are made by doing welding the wrought iron sheets and it will provide you a seamless pipe.
- Cutting, threading and joining operation is easily done in this type pipe and the average weight of these are lesser than other ones.
- In wrought iron pipe, there are few types of joint are used, those are following below –
  - Flanged Joint
  - Socket Joint
  - Welded Joint
- Wrought iron pipes are available in the sizes of 12 mm to 15 cm.

Steel Pipe –

- Steel ;pipes are generally used to transport liquid, gases, oil, etc from one place to another.
- Steel pipes are generally made from steel sheets and these are widely used in everywhere.
- In thi8se type of pipe, small joint are joined by weld connection and larger joints are done by riveted or welded connection.
- After producing those pipes are dipped into zinc solution to create rust prevention and this system is called “Galvanization”.
- The average lifespan of steel pipes are 25 to 50 years.
- Steel pipes are very lightweight and these pipes are easily joined with welded connection.

- Repair of this pipe if very much difficult and alkaline water & acidic water are the cause of rust but this can be easily bent according to the work.

Copper Pipe –

- Copper pipes are generally available in smaller sized diameter but in this type of there is no chance of rusting.
- Copper pipes are not widely used because the cost of this pipe is little bit higher than the other ones.
- This type of pipes are generally used to transport hot water and steam and the main advantage of this pipe is it does not bend in higher temperature.
- In copper pipes, there are generally two types of joints are available, those are in the following-
    - Union joint
    - Flanged joint

Plastic Pipe –

- These pipes are widely used in modern days and these are the combination of P.V.C and rubber.
- Alkaline water, water, acidic water are supplied by this pipe no higher temperature liquids can be transported by this type pipe.
- For joining purpose, it uses socket and threaded joints and a solution.
- Rust is not observed in this type of pipe and those are also lightweight.
- Cutting, bending and joining are also very easy in this type of pipe.
- Plastic pipes can resist electric current and those are not good enough to carry hot water and these are also damage prone to nail damage.

Asbestos Cement Pipe –

- Asbestos cement pipes are generally made of asbestos, cement, silica,, etc and after that it is gone through high pressure environment.
- Here, asbestos fibres are mixed with cement and it acts as reinforcement cement.
- These are available in the market of size 4 inch to 36 inch and 13 feet length. It can withstand the pressure of 200 psi.
- For joining purpose, asbestos cement pipe uses a special type of coupling, those are pipe sleeve and two rubber rings.
- Asbestos cement pipes are lightweight and it does not require so much skilled labour.

- These pipes are easily damaged by excavating tools and gasoline.
- It can carry water under low pressure and it does not show too much strength in bending.

Concrete Pipe –

- Concrete pipes are pre-cast pipes which have diameter of 72 inches.
- Generally, all precast pipes are reinforced but those pipes which have diameter less than 24 inches.
- Pre-cast concrete pipes are thinner than cast in-situ pipes because they are manufactured in controlled environment.
- The production rate of these pipes are 40 to 120 feet/hr and average lifespan is 35 to 50 years.
- Concrete pipes are mainly used to transport wastewater but there is higher chances of sulphide corrosion.
- Plain concrete pipes are used for low pressure materials and reinforced cement concrete pipes are used for high pressure material transportation.
- The maintenance cost of this type of pipe is also very low but the pipes are too much heavy & that affects thabsportation.

Vertified Clay Pipe –

- This type is generally used as pressure pipe but it is widely used in drainage and sewage purpose.
- It is corrosion free substance and the joints are flexible.

USES OF PIPE:

- Acrylonitrile Butadiene Styrene Pipe: Used in wastewater and sewage draining
- Brass Pipe: Used mainly in different household items.
- Cast Iron Pipe: Used in filter plants, plumbing station, etc.
- Chlorinated Poly Vinyl Chloride Pipe: Used to transport hot as well as cold liquid or gaseous substance.
- Unplasticized Polyvinyl Chloride Pipe: Used in commercial residential building purpose.
- PVC Pipe: Used for residential waste drainage purpose.
- Copper Pipe: Used to carry hot water or steam from one place to another place.

- Cross-linked Polyethylene Pipes: Used to transport potable water.
- Galvanized Steel Pipe: Used in generally residential building to transport water.
- Galvanized Iron Pipe: Used to supply gas, liquid or any other liquid substances.
- Steel Pipe: gas, liquid or any other liquid substances are supplied.
- High Density Polyethylene Pipe: Used for sewer purpose.
- Low Density Polyethylene Pipe: Used for water softening line.
- Polypropylene Pipe: Used for handling food applications and liquid or gaseous substances.
- Polythene Pipe: Used to supply cold water.
- Vinyl Pipe: Used for laboratory settings.
- Asbestos Cement Pipe: Used for sewer purposes.
- Stoneware Pipes: Used for carrying underground sewer
- Concrete Pipe: Used for heavy water drainage disposal.

ADVANTAGES OF PIPE:

Copper Pipe –

- The longevity of this pipe is higher, it lasts more than 50 years.
- Durability of this material is higher, it resists corrosion and different weathering condition.
- It can resist higher temperature and damage free from acid water.

Galvanized Steel Pipe –

- This type of pipe is very strong.
- The initial cost of the pipe is also moderate level.

Polyvinyl Chloride Pipe –

- PVC pipes have higher longevity than others. It can withstand higher internal pressure.
- The installation cost is very low of this type of pipe.

Chlorinated Polyvinyl Pipe –

- It can handle higher water pressure.
- Longevity is high and easy to use.
- Initial cost of this pipe is low.

Cross-Linked Polyethylene Pipe –

- Higher longevity and higher flexibility of this pipe.
- This type of pipe is easy to install and temperature friendly. The installation cost of this pipe is not very high ($30 per 100 feet).

DISADVANTAGES OF PIPE:

Copper Pipe –

- The initial cost is little bit higher than other pipes. The cost is near about $285 per 100 feet.

Galvanized Steel Pipe –

- It has short lifespan, near bout 20 to 50 years.
- It is prone to rust attacks.
- Weight of this is high and there is a chance of clogging.

Polyvinyl Chloride Pipe –

- It can not transport hot water.
- It is available in limited size that's why you need to care about this.

Chlorinated Polyvinyl Pipe –

- The main disadvantage is this pipe is easily exposed due to sunlight.

Cross-Linked Polyethylene Pipe –

- This type of pipe can not be used for outside purpose because it is damaged due to UV radiation.
- Sometimes, this type of pipe affects the odour and taste of drinking water.

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